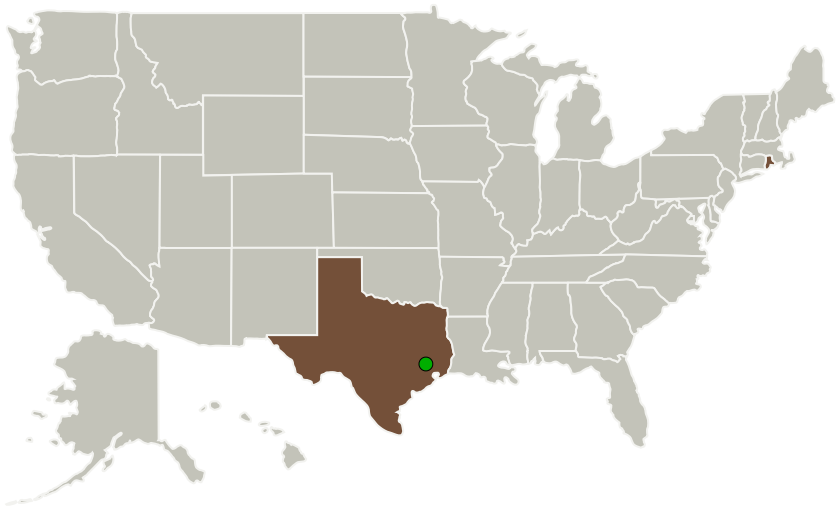
A Martian Air Battery, Phase I

Completed Technology Project (2011 - 2011)

Project Introduction

This project will investigate an entirely new battery chemistry by developing A Martian Air Battery. Specifically the project will explore the concept of a Martian battery that utilizes in-situ resources to produce energy for NASA applications. Our experience producing high-energy air cathodes for our work with existing metal-air systems will be utilized during this program. Our established air cathodes will be modified, to accommodate a Martian environment, and incorporated into cells. Several different chemically composed cathodes will be investigated. The anticipated result of the phase 1 project is a new battery. Advantages of the proposed Martian battery include a light weight source for in-situ energy production. In addition the conceptual battery will be capable of atmospheric gas collection and separation.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Yardney Technical Products, Inc.	Lead Organization	Industry	East Greenwich, Rhode Island
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

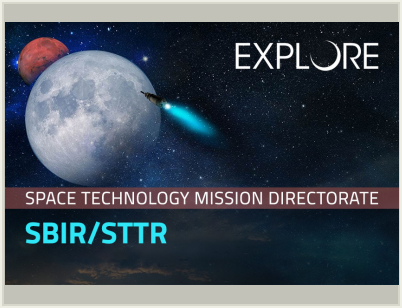


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Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Yardney Technical Products, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
Rhode Island	Texas

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137827)*

Project Management

Program Director:

Jason L Kessler

Program Manager:

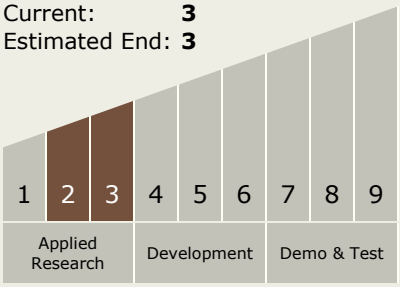
Carlos Torrez

Principal Investigator:

Arthur Dobley

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX07 Exploration Destination Systems
  - TX07.1 In-Situ Resource Utilization
    - TX07.1.3 Resource Processing for Production of Mission Consumables

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Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System